

Amendments to the Specification:

Please note that the changes now proposed cite to page and line numbers corresponding to the version of the application available from the Patent Application Information Retrieval ("PAIR") website.

Please replace the paragraph beginning at page 1, line 6 with the following amended paragraph:

[0001] The invention relates to battery and inverter configuration and more specifically battery and inverter configuration with increased efficiency.

Please replace the paragraph beginning at page 1, line 9 with the following amended paragraph:

[0003] In prior ~~systems either one inverter is used or multiple inverters are used but~~ systems, the inverters are always activated so at low load the system is not very efficient. Even though multiple inverters are used only one battery string may be used and as more power is used the batteries operate more ~~inefficient~~ inefficiently. Where only one inverter is used the system lacks redundancy and if the inverter or battery string fails the whole system fails. Some inverters may have a low stand-by power usage, but as soon as they are activated, their power consumption goes ~~up and the up~~ up. The efficiency of inverters at low power usage is still low.

Please replace the paragraph beginning at page 2, line 4 with the following amended paragraph:

[0005] In order to increase efficiency of battery powered AC electricity supply, the current invention has multiple inverter/battery modules that are used in parallel but that can be individually shut down. The number of inverters activated depends on the power usage. When only a little power is needed only one or a few inverters are activated. When more power is needed the battery inefficiency increases and more inverters will be activated.

Please replace the paragraph beginning at page 3, line 3 with the following amended paragraph:

[0012] FIG. 6 is a graph of the number of inverters needed to service about consumption assuming 2 kW inverters and 1.5 kW thresholds;

Please replace the paragraph beginning at page 3, line 6 with the following amended paragraph:

[0013] FIG. 7 is a graph [[of]] illustrating an example [[of]] where only one inverted inverter is needed [[in]] for more than 95% of the time; and

Please replace the paragraph beginning at page 3, line 16 with the following amended paragraph:

[0017] To increase efficiency of battery powered AC electricity supply, the current invention [[1]] has multiple inverter/battery modules that are used in parallel but that can be individually shut down. The number of inverters activated depends on the power usage. When only a little power is needed only one or a few inverters are activated. When more power is needed the battery inefficiency increases and more inverters will be activated.

Please replace the paragraph beginning at page 4, line 2 with the following amended paragraph:

[0018] FIG. 1 displays a chart showing ~~how the Inverter efficiency based on the~~ versus relative power usage. The chart shows that inverter efficiency goes up exponentially based on inverter relative output. While FIG. 2 displays a chart that shows Battery power efficiency versus power usage. This chart shows how battery efficiency goes down based on battery load.

Please replace the paragraph beginning at page 4, line 9 with the following amended paragraph:

[0019] The invention consists of ~~an inverter~~ inverters supplied with power from a string of batteries (DC energy sources) **5** where two or more of ~~these~~ the inverters are connected to a common load **20** and where two or more of ~~these~~ the inverters are also connected to a controller **10** through a communication bus **30** connected to the ~~inverters~~ inverters **15**. The DC energy sources **5** are connected to the ~~inverters~~ inverters **15** which are connected to the power grid **100** and load **20** through the line **105**. The controller **10** can be a separate unit or the inverters **15** can have individual controls that form a peer-to-peer network and the control is divided between the units. This provides extra redundancy ~~[[as]]~~ so that in case one unit is lost the rest can provide the control function. **FIG. 3** displays the Inverter/battery modules in parallel and connected to a controller **10**.

Please replace the paragraph beginning at page 4, line 23 with the following amended paragraph:

[0020] **FIG. 4** shows a graph displaying an example of the number of inverters **15** activated based on actual power usage. It ~~shown~~ shows that more inverters **15** ~~being~~ are needed for ~~the~~ higher power loads.

Please replace the paragraph beginning at page 5, line 4 with the following amended paragraph:

[0021] The controller **10** measures the power consumption of the load using a sensor. Based on the power consumption and a built-in algorithm and/or look-up table the controller ~~determine~~ determines which of the inverters to activate. Said built-in algorithm and/or look-up table is ~~soured~~ stored on said controller **10** in a memory means which are well know in the art. **FIG. 5** displays a graph of residential power usage. While **FIG. 6** displays a graph of the number of inverters **15** needed to service power consumption in **FIG. 5** assuming 2 kW inverters and 1.5 kW thresholds.

Please replace the paragraph beginning at page 5, line 14 with the following amended paragraph:

[0022] In this invention, the inverters **15** do not need to be of the same power rating. A lower power inverter **15** could be used to run the loads during extended low power periods. In case the inverters are used for peak shaving, batteries connected to inverters **15** not in use can be recharged as long as the input power does not exceed the peak shaving threshold. A simple algorithm for equal sized inverters could be: $n_{\text{inverters}} = \text{INT}(P_{\text{usage}}/P_{\text{threshold}})$ where the number of inverters ~~usage threshold inverters~~ needed is the integer part of power usage divided by a threshold power depending on the inverters used.

Please replace the paragraph beginning at page 6, line 2 with the following amended paragraph:

[0023] As shown in the bar chart in **FIG. 7**, only one ~~inverted~~ inverter is needed in more than 95% of the time based on normal power usage.

Please replace the paragraph beginning at page 6, line 5 with the following amended paragraph:

[0024] The electrochemical storage **5** feeding DC current to the individual inverter **15** can ~~either~~ be identical for all inverters **15**. ~~By using~~ Using the same type of storage (batteries and/or capacitors and/or flywheels) **5** will create redundancy. This is so in case one string fails the others can provide energy but at a reduced level. ~~The using~~ Using different types of storage may allow for the use of high power/short duration energy storage for peak power and high energy storage devices for base power. In the preferred embodiment, suitable high power storage devices **5** ~~includes~~ may include but are not limited to: High power lead-acid, high power nickel metal hydride, nickel zinc, lithium-ion, lithium-metal, sodium chloride batteries, and symmetrical or asymmetrical supercapacitors (also called ultra capacitors), and mechanical flywheel technology. The suitable high energy storage devices **5** ~~includes~~ also may include but

are not limited to: Lead-acid, nickel metal hydride, sodium sulfur, nickel chloride, nickel zinc, lithium-ion, and lithium metal batteries.

Please replace the paragraph beginning at page 6, line 23 with the following amended paragraph:

[0025] FIG. 8 displays a graph based on an example of using five 2 kW inverters 15 instead of one 10 kW inverter. It shows that using 5 2 kW inverters instead of one 10 kW inverter 15 can potentially reduce the power loss ~~with~~ by 50% or more.

Please replace the paragraph beginning at page 7, line 5 with the following amended paragraph:

[0026] Alternative Embodiments ~~Yet~~ In yet another embodiment of the invention, the base power may also be supplied using power generating devices including but not limited to fuel cells, solar-panels, gas turbines, sterling engines, and diesel generators.